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ABSTRACT

The purpose of this document was to present the development and validation of an instrument to be utilized by local inservice education coordinators in the evaluation of career education inservice training programs. It is proposed that the instrument, the Career Education Concept Inventory (CECI), can be used to provide a measure of understandings and attitudes held by professional education personnel as a means of determining benchmark information necessary for program planning. It is suggested that the CECI may also be used in a pre- and posttest design thereby providing a measure of individual or group change. This document outlines the purpose of the instrument and its development, both in preliminary and final forms, the data analysis used (sample characteristics, item analysis, reliability, validity), and gives directions for administration and scoring. The CECI questionnaire, a respondent information sheet, and relevant data tables are included. (KP)

ED 087869

# Career Education Concept Inventory

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# CAREER EDUCATION CONCEPT INVENTORY

## Purpose of Instrument

Active exploration of the career education concept is an increasing phenomonon in public education today. Many school systems, separately or in concert with regional groupings of systems, are involved in pilot projects having as an operational objective the examination of the concept towards local adaption. Regardless of the scope or local program focus, nearly every project gives high priority to staff development efforts, usually conducted within in-service training programs. These efforts are "total personnel renewal program(s)"[1] and considered as "vital to program adaption and delivery."[2] Evaluation becomes essential to in-service programming in order to provide evidence of attainment of objectives (product). The identification of successful program activities, or adequate evaluation and subsequent accountability, is often a consideration before recycling (process).

The staff of the Cornell Institute for Occupational Education has undertaken the development and validation of an instrument that can be utilized by local in-service education coordinators in the evaluation

[1] Halverson, P. "Is Career Education a Passing Fancy?" Journal of Teacher Education, Summer 1973, V. XXII, No. 2, p. 110.

[2] Norton, R. "In Service Education: Vital to Career Education Delivery." Presentation: American Vocational Association Convention, Chicago, 1972.

of career education in-service training programs. The instrument, The Career Education Concept Inventory (CECI), can be used to provide a measure of understandings and attitudes held by professional education personnel as a means of determining benchmark information necessary for program planning. The CECI may also be used in a pre and post testing design thereby providing a measure of individual or group change.

## Development of Instrument

Preliminary Form. The preliminary instrument consisted of 46 statements. The respondent was asked to check on or between four points of a continuum indicating the degree to which each statement reflected their understanding of the career education concept. The item pool for the statements was synthesized by members of the CIOE staff* from established career education sources, program guidelines, and goals and objectives within career education literature. A consensus of agreement among three experts in career education was reached for each of the 46 items. These were incorporated into a preliminary draft of the instrument for field testing. The instrument was administered to approximately 100 educators --- teachers, counselors and administrators who were involved in regional in-service programs.

*Special acknowledgment is given Helen Veres for her contribution to the compilation of the original item pool.

Final Form. Analysis of the data collected from the field test of the preliminary form led to revisions in format and item content:

--A seven-point scale was incorporated replacing the continuum of the preliminary form. This change allowed for definitive responses thereby simplifying certain standardization procedures.

--The content of selected items was altered and additions were made to include appropriate curricular principles synthesized from established sources.

--Items that proved non-discriminatory or negative were discarded.

Cornell Institute for Occupational Education staff members working in career education reached a consensus of agreement on the resulting 43 items.

## Data Analysis

Sample Characteristics. The revised instrument was administered to 390 elementary level educators attending six week summer institutes in career education supported by Education Professions Development Act funding through the Bureau of In-Service Education of the State Education Department. The educators represented sixty-two school systems from twenty-seven counties across the State, encompassing rural, urban, semi-urban and semi-rural geographic locations, and as such, approximates a sample of the target population. Data analysis of test characteristics and preliminary normative data are based on this group.

Of the potential 390 respondents from ten test sites, 242 complete returns from seven test sites were usable. The respondent group by professional assignment consisted of 120 teachers in K-3, 82 teachers in 4-6, 7 administrators, 6 counselors and 27 other teaching or assignments (i.e. music, librarian). The respondent group, by years of teaching experience was 130 0-5 years, 92 6-15 years, 20 16-24 years and 0 over 25 years.

Item Analysis. Test items were analyzed by item - total correlations to obtain a relative comparison among them. Significance levels of .001 were found for all items with the exception of 3, 19, 23, 40, 41. Of these five not reaching the .001 level, all items except one reached significance levels of at least .03. As a result of this analysis, that item was deleted from the final instrument and the remaining items renumbered. After re-examination of the remaining four, item 41 (significance level .027) was restated for purposes of clarification. This item, number 40 in the final instrument, is presented without statistical verification.

Table I delineates a profile of each item that comprises the final form of CECI as presented in this publication. The mean, standard deviation and standard error of the deviation are given for each item.

TABLE I: ITEM MEAN PROFILE

| ITEM | MEAN | STANDARD DEVIATION | STANDARD ERROR |
|---|---|---|---|
| 1 | 6.1 | 1.2 | .07 |
| 2 | 6.0 | 1.3 | .08 |
| 3 | 1.9 | 1.5 | .09 |
| 4 | 5.8 | 1.4 | .08 |
| 5 | 2.9 | 1.8 | .11 |
| 6 | 5.5 | 1.5 | .09 |
| 7 | 3.9 | 2.0 | .12 |
| 8 | 1.4 | .99 | .06 |
| 9 | 4.8 | 2.0 | .12 |
| 10 | 6.5 | .99 | .06 |
| 11 | 6.7 | .53 | .03 |
| 12 | 1.1 | .58 | .03 |
| 13 | 5.1 | 1.7 | .11 |
| 14 | 6.5 | .87 | .05 |
| 15 | 5.4 | 1.8 | .11 |
| 16 | 6.9 | .33 | .02 |
| 17 | 6.5 | .85 | .05 |
| 18 | 6.7 | .67 | .04 |
| 19 | 3.6 | 2.2 | .14 |
| 20 | 5.6 | 1.4 | .08 |
| 21 | 2.4 | 1.8 | .11 |
| 22 | 5.5 | 1.7 | .11 |
| 23 | 2.5 | 1.7 | .10 |

| | | | |
|---|---|---|---|
| 24 | 5.6 | 1.4 | .08 |
| 25 | 1.3 | 1.0 | .06 |
| 26 | 5.8 | 1.3 | .08 |
| 27 | 1.2 | .83 | .05 |
| 28 | 5.8 | 1.6 | .10 |
| 29 | 1.8 | 1.5 | .09 |
| 30 | 6.3 | 1.1 | .07 |
| 31 | 6.4 | .97 | .06 |
| 32 | 1.2 | .89 | .05 |
| 33 | 3.0 | 2.1 | .13 |
| 34 | 4.9 | 1.9 | .12 |
| 35 | 4.9 | 1.6 | .10 |
| 36 | 6.2 | 1.2 | .07 |
| 37 | 5.8 | 1.4 | .08 |
| 38 | 3.0 | 1.9 | .12 |
| 39 | 4.3 | 1.9 | .12 |
| 40 | 3.4 | 2.0 | .12 |
| 41 | 5.4 | 1.5 | .09 |
| 42 | 6.8 | .46 | .02 |

Reliability. Reliability of the instrument was estimated by internal consistency procedures. The Spearman-Brown formula was utilized to obtain a total test reliability estimated at 75.5.

Validity. Established resources in career education served as validating sources for item writing. Content validity was further confirmed by agreement of experts in career education and curriculum. The content and/or domain of the instrument, as well as each item included within the inventory, was judged to be a valid concept-related statement within career education. A consensus of agreement was mandated before inclusion of any item within the instrument.

The Career Education Concept Inventory constitutes the remainder of this monograph. The final instrument consists of 42 items that, with the exceptions previously noted, have been verified as to test characteristics. Users may reproduce the inventory for their purposes. The staff of Cornell Institute for Occupational Education requests only that they be given access to data collected by the instrument and whatever other feedback the user feels relevant. Such information will aid in revision and future norming.

## Directions for Administration

The Career Education Concept Inventory is designed for use with educators and other adults involved in career education programs such as in-service training, curriculum development and other seminar activities designed to study the concept. It provides a determination of cognitive and attitudinal concepts held by educators. The respondent is asked to circle, on a seven point scale, his degree of agreement with the 42 inventory statements as concepts within career education.

No materials are needed other than the instrument as answers are marked on the instrument itself. Approximately 25-30 minutes is needed to complete the inventory.

Scoring. The item mean profile scores achieved by the 242 professional educators that comprise the testing sample are presented as baseline data in Table I. The profile provides a basis for comparison of results from other administrations of the test. It identifies 1) the mean obtained for each item by the analysis sample, 2) the standard deviation for each item, and 3) the standard error of the deviation. In-service coordinators may wish to examine the items and note differences between locally determined "ideal" answers and the item mean scores presented. Discussion and explication of the differences may form the core content of an in-service program.

In Table II, the percentage of responses given for each of the seven degrees of consistency within each item by the analysis group are delineated. This provides the user with another method of comparison by furnishing a break-down of responses item-by-item. For the user's convenience the mean for each item is approximated by the line in Table II.

TABLE II: PERCENTAGE OF RESPONSES WITHIN DEGREES OF CONSISTENCY

| ITEM | DEGREE OF CONSISTENCY 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| 1 | 0 | 1.2 | 5.8 | 3.9 | 15.1 | 19.3 | 54.8 |
| 2 | 1.9 | .8 | 4.6 | 4.2 | 14.3 | 22 | 52.1 |
| 3 | 61 | 10.8 | 15.8 | 1.9 | 5.8 | 2.7 | 1.9 |
| 4 | .8 | 1.5 | 8.5 | 4.6 | 17.8 | 23.2 | 43.6 |
| 5 | 28.2 | 11.6 | 19.3 | 10.0 | 20.5 | 7.7 | 2.7 |
| 6 | 1.9 | 1.9 | 11.6 | 5.8 | 20.8 | 18.9 | 39.0 |
| 7 | 14.3 | 14.7 | 20.8 | 8.5 | 12.4 | 12.7 | 16.6 |
| 8 | 80.3 | 8.5 | 4.6 | 3.5 | 1.2 | .4 | .8 |
| 9 | 10.8 | 2.7 | 12.4 | 13.5 | 13.5 | 15.4 | 31.7 |
| 10 | 1.2 | 0 | 1.5 | 1.9 | 5.0 | 11.2 | 79.2 |
| 11 | 0 | 0 | .4 | .8 | 1.5 | 13.5 | 83.8 |
| 12 | 91.9 | 5.8 | 0 | 1.5 | 0 | .4 | .4 |
| 13 | 4.6 | 3.1 | 13.5 | 10.0 | 19.7 | 17.4 | 30.5 |
| 14 | .8 | 0 | .4 | 1.9 | 6.2 | 18.1 | 72.6 |
| 15 | 6.2 | 4.2 | 6.2 | 5.0 | 20.1 | 18.9 | 39.0 |
| 16 | 0 | 0 | .4 | 0 | .4 | 3.5 | 95.8 |
| 17 | .4 | .4 | 1.2 | .4 | 6.6 | 17.4 | 73.7 |
| 18 | .4 | .4 | 0 | .8 | 2.3 | 9.3 | 86.9 |
| 19 | 21.2 | 6.2 | 11.2 | 5.8 | 15.4 | 16.6 | 23.2 |
| 20 | 1.9 | 1 2 | 6.2 | 7.3 | 22.0 | 26.6 | 34.7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 21 | 35.1 | 11.6 | 15.4 | 13.5 | 12.4 | 4.2 | 5.8 |
| 22 | 6.6 | 1.5 | 6.6 | 5.8 | 16.2 | 20.1 | 43.2 |
| 23 | 37.8 | 20.8 | 17.8 | 5.8 | 8.1 | 4.6 | 3.9 |
| 24 | .8 | .8 | 10.8 | 6.2 | 21.6 | 23.6 | 35.9 |
| 25 | 26.1 | 8.1 | .4 | .4 | 1.5 | .8 | 1.9 |
| 26 | .4 | .8 | 7.7 | 7.3 | 18.1 | 22.0 | 43.2 |
| 27 | 85.7 | 7.3 | 2.7 | .4 | 1.9 | .4 | .4 |
| 28 | 3.9 | 2.3 | 6.2 | 3.5 | 13.5 | 22.4 | 47.9 |
| 29 | 62.9 | 15.8 | 7.7 | 3.5 | 5.0 | 1.2 | 3.1 |
| 30 | 1.2 | 0 | 2.7 | 2.3 | 11.6 | 20.8 | 61.0 |
| 31 | .8 | 0 | 1.5 | 1.9 | 8.1 | 22.0 | 65.3 |
| 32 | 91.1 | 4.2 | 0 | 1.2 | 1.2 | .4 | 1.2 |
| 33 | 38.6 | 11.6 | 9.3 | 9.3 | 13.1 | 6.6 | 10.8 |
| 34 | 10.0 | 3.5 | 12.4 | 3.9 | 23.9 | 17.8 | 28.2 |
| 35 | 5.8 | 2.7 | 10.8 | 13.9 | 25.1 | 17.8 | 23.2 |
| 36 | 1.9 | .8 | 3.1 | 1.5 | 10.4 | 22.4 | 59.5 |
| 37 | 2.3 | .8 | 3.9 | 8.1 | 15.8 | 23.2 | 45.2 |
| 38 | 32.8 | 15.4 | 12.4 | 9.7 | 16.2 | 5.4 | 6.9 |
| 39 | 12.0 | 6.2 | 18.5 | 12.7 | 17.4 | 14.3 | 17.8 |
| 40 | 26.6 | 11.6 | 16.2 | 8.1 | 19.3 | 8.5 | 9.3 |
| 41 | 1.9 | 3.1 | 7.3 | 11.6 | 20.1 | 25.5 | 29.3 |
| 42 | 0 | 0 | .4 | 0 | 2.3 | 7.7 | 89.2 |

The staff of CIOE recognizes the need for additional field tests and accumulation of normative data from educators at all levels. Users are requested to contact CIOE relative to sharing results of local administrations.

CAREER EDUCATION CONCEPT INVENTORY

Cornell Institute for Occupational Education
Cornell University
Ithaca, New York

DIRECTIONS: The following statements indicate goals, ideas and principles which may be representative of career education. Read each statement carefully. Mark your response by checking the number which best indicates the degree to which the statement reflects the career education concept.

SAMPLE:

Aptitudes are a consideration in career choice.

| 1 | 2 | 3 | 4 | 5 | 6 | (7) |
|---|---|---|---|---|---|---|
| Inconsistent with career education concepts | | Somewhat consistent with career education concepts | | moderately consistent with career education concepts | | very consistent with career education concepts |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. Career education prepares individuals for college as well as employment | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. Each teacher has the responsibility to emphasize the contribution of his/her teaching assignment to career development, regardless of level or discipline. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. Career education programs encourage students to make a career choice before entering high school. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. Objectives of career education are congruent with those of education generally. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. Responsibility for career education should rest primarily with the school. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. Vocational education is included within the concept of career education. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7. Teachers generally accept vocational choice as a developmental process beginning in early childhood. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. Implementation of a career education program within a school system means teaching additional vocational courses at earlier grade levels. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. A career education orientation is especially relevant to students with special needs and learning disabilities. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. Career education provides an opportunity for students to acquire knowledges and skills that will be applicable in choosing careers both in the immediate future and in later adult life. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. An integral part of the career education concept is the emphasis on attitudes toward work and informed decision-making. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. Career education should be the responsibility of a special teacher or counselor rather than classroom teachers. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. The New York State Regents Policy Statement on comprehensive occupational education is based upon the student's right to choose his career goals. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. Career education provides a unifying thread that increases the relevance of academic instruction. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. Within career education programs, educational institutions are charged with providing placement services for all students whether graduates or drop-outs. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. Learning in career education is not reserved to the classroom, but utilizes home, community, business, industry and other available resources. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 17. A key objective of career education is to enable the individual to function effectively and be responsible for personal wants and needs. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. Career education emphasizes a developmental continuum of educational experiences beginning in early childhood and extending into adulthood. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. Career education goals differ from general education goals in that the student learns of himself in relation to society. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. The concept of occupational clustering provides the teacher with a useful criterion in planning a balance of learning experiences. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. A career education orientation is indiscernible within the history of American education. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22. Career education curriculum is distinct from discipline centered curriculum as the nature of the learner becomes the focus rather than a body of content. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23. Career education goals are readily found in existence therefore need not be deduced. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24. The knowledge, skills, attitudes and motivation necessary for coping with developmental tasks at each phase in career education can be guided and fostered through instruction. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25. Understanding interpersonal relationships and interaction among occupational roles is unnecessary. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 26. Students will understand the relationship of their present and future occupational status in relation to the economic trends and projections within the nation, state and community. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 27. Students establish well-focused career goals early in their programs so that they may be excluded from having to learn about a wide range of opportunities. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28. Identification of career information resources is an essential activity in the student's decision-making process. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 29. A low-priority objective is understanding the relationship among personal economics, life-style and occupational roles. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 30. Implementation of career education results in additional experience-based activities outside the school. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 31. Career education accommodates individualized instruction. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 32. A career education emphasis is inappropriate for students of high ability or those who are going to college. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 33. A viable approach to curriculum development is through the production of materials with statements of purpose, goals, objectives and rationale a secondary effort. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 34. Career education involves refocusing of the school program. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 35. Bloom's Taxonomy is a useful criterion in evaluating career education curriculum materials. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 36. An appraisal of objectives plus systematic programs of career development and implementation are needed to prevent career education from being relegated to a fad. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 37. The career decision making process is a rational process. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 38. A systematic approach to organization usually results in one best approach to operational conduct of a curriculum project. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 39. Need for career education has arisen from disruption of the traditional social relationships that have previously contributed to youth's mastery of the career decision developmental task. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 40. Implementation of the career education concept requires a major reorientation of local, state and national educational goal statements. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 41. The best approach to evaluation of career education programs is the development of criterion referenced measurements to determine the progress of meeting stated objectives. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 42. Implementation of the career education concept necessitates communication and utilization of community resources. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

## RESPONDENT INFORMATION SHEET

Directions: Please check appropriate response

Assignment:

_____ administration

_____ counselor

_____ teacher

_____ other, please specify _____

_____

_____ elementary

_____ early secondary

_____ secondary

_____ multi-level

Years of experience:

_____ 0-5 years

_____ 6-15 years

_____ 16-24 years

_____ over 24 years

Previous experience with the concept of career education:

_____ none

_____ minimal reading

_____ in-service sessions

_____ participation in regional project

_____ other, please specify _____

_____ male

_____ female